

Radar for Ocean Wind Estimation

Science Objectives

- Improve satellite radar techniques for measuring wind speed over the global ocean.
- Perform unique high resolution study of ocean wave processes both near the coast and out to sea.

Research supports NASA's TOPEX, JASON-1, NSCAT, QuickScat and SeaWinds satellites (see <http://www.hq.nasa.gov/office/ese>) and coastal studies by the Office of Naval Research.



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SENSOR

Millimeter-wave (36 GHz) CW radar for low altitude flight

Low-power, compact design

Radar surface footprint is less than 1 meter in diameter

Absolute calibration of radar return power



LongEZ over the Atlantic off of Cape Hatteras NC

PRELIMINARY RADAR WIND SPEED DATA

Initial data from LongEZ flights over the Atlantic Ocean off of Cape Hatteras NC.

Wind data derived from radar ocean backscatter signal compare well to wind speed measured using the LongEZ meteorological sensors.

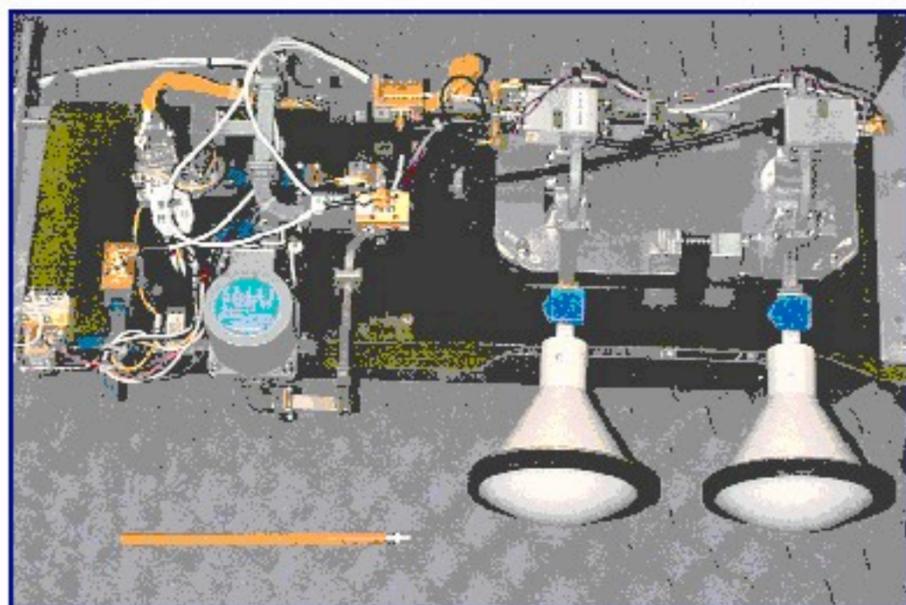
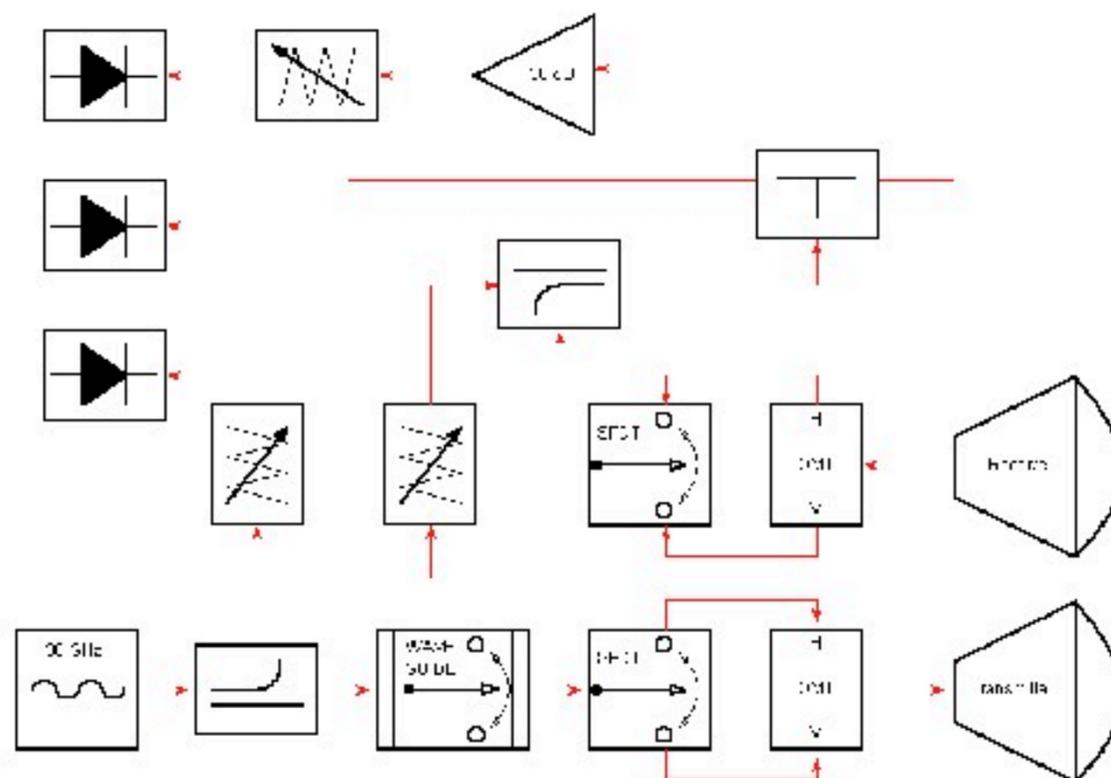


Photo of the radar. Unit slides into the belly pod of the LongEZ. Radar transmits a signal to the sea surface and measures the magnitude of signal that scatters back.



Block Diagram for LongEZ Down-Looking Scatterometer (DLS)

